

Dr. Patricia Rodríguez Maciá

EDUCATION

2014 – 2017: **Doctoral Degree in Natural Sciences (Dr. rer. nat.) (with distinction)**

- Ruhr University Bochum / Max Planck Institute for Chemical Energy Conversion, Germany
- Awarded with the Ernst Haage prize for “outstanding achievement” in the field of Energy Conversion

2012 – 2013: **Master of Science in Chemistry**

- University of Alicante, Spain

2005 – 2011: **Bachelor of Science in Chemistry**

- University of Alicante, Spain / Final Project in Aarhus University, Denmark.
- Thesis: “*Synthesis and Electroanalytical Studies of Benzo[1,2,3]thiadiazole*”

PROFESSIONAL EXPERIENCE

06.01.2020 – current: **Postdoctoral Research Associate**

Inorganic Chemistry Laboratory, University of Oxford, Oxford, UK

- Department of Chemistry (Prof. Dr. Kylie A. Vincent)

01.11.2017 – 31.12.2019: **Postdoctoral Researcher**

Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany

- Department of Inorganic Spectroscopy (Prof. Dr. Serena DeBeer)

01.05.2014 – 31.10.2017: **Doctoral Student**

Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany

- Department of Biophysical Chemistry (Prof. Dr. Wolfgang Lubitz)

01.02.2013 – 31.08.2013: **Assistant Researcher Internship** (with MPI Stipend)

Center of Advanced European Studies and Research associated to Max Planck Institute (Caesar), Bonn, Germany.

- Department of Molecular Sensory Systems (Prof. Dr. U. Benjamin Kaupp)

05.04.2012 – 21.09.2012: **Leonardo Da Vinci Assistant Researcher Fellow** (with Leonardo Da Vinci Fellowship)

Institut für Verbundwerkstoffe GmbH (IVW GmbH), Kaiserslautern, Germany.

- Department of Material Science

01.09.2011 – 31.03.2012: **Assistant Researcher**

University of Alicante, Alicante, Spain

- Department of Electrochemistry

01.08.2010 – 31.01.2011: **Erasmus Assistant Researcher Fellow** (with Erasmus Fellowship)

Aarhus University, Aarhus, Denmark

- Department of Organic Surface Chemistry (Prof. Kim Daasbjerg and Prof. Steen Uttrup Pedersen)

AWARDS AND MERITS

- Ernst Haage Prize for Doctoral Students. Best Dissertation 2017. Ernst Haage Foundation / Max Planck Society. Mülheim an der Ruhr (Germany), 2017
- Lindau Nobel Laureate Meeting 2017 - Selected Participant
- Best Poster Award. XXI International Hydrogenase Conference, Marseille (France), 2016
- Best Poster Award. XXIII International Symposium on Bioelectrochemistry and Bioenergetics, Malmö (Sweden), 2015
- Max Planck Society Stipend for Doctoral Students (2014 - 2015)
- Max Planck Society Stipend for Internship (2013)
- Leonardo Da Vinci Fellowship by the Education Ministry of Spain (2012)
- Erasmus Fellowship by the Education Ministry of Spain (2011)

SELECTED PRESENTATIONS

- SPP Autumn School, November 2019, Erkner (Germany). Invited Speaker
- 15th International Symposium on Applied Bioinorganic Chemistry, June, 2019, Nara (Japan). Invited Speaker
- 12th Hydrogenase Conference, March - April, 2019, Lisbon (Portugal). Invited Speaker
- Bioinorganic Chemistry Gordon Research Seminar (GRS), February, 2019, Ventura, CA (US). Contribution: Invited Speaker
- International Symposium on Biological Material Science for Agriculture and Engineering, June, 2018, Tokyo (Japan). Contribution: Invited Lecture

PEER-REVIEWED PUBLICATIONS

- 1) **P. Rodríguez-Maciá**, A. Dutta, W. Lubitz, W. J. Shaw and O. Rüdiger. Direct Comparison of the Performance of a Bio-inspired Synthetic Nickel Catalyst and a [NiFe]-Hydrogenase, Both Covalently Attached to Electrodes; *Ang. Chem. Int. Ed.*, **2015**, *54*, 12303 – 12307
- 2) J. A. Birrell, K. Wrede, K. Pawlak, **P. Rodríguez-Maciá**, O. Rüdiger, E. J. Reijerse and W. Lubitz. Artificial Maturation of the Highly Active Heterodimeric [FeFe] Hydrogenase from *Desulfovibrio desulfuricans* ATCC 7757; *Isr. J. Chem.*, **2016**, *56*, 852 – 863
- 3) **P. Rodríguez-Maciá**, N. Priyadarshani, A. Dutta, C. Weidenthaler, W. Lubitz, W. J. Shaw and O. Rüdiger, Covalent Attachment of the Water-insoluble Ni(P^{Cy}₂N^{Phe}₂)₂. Electrocatalyst to Electrodes Showing Reversible Catalysis in Aqueous Solution; *Electroanalysis*, **2016**, *28*, 2452 – 2458
- 4) **P. Rodríguez-Maciá**, J. A. Birrell, W. Lubitz and O. Rüdiger, Electrochemical Investigations on the Inactivation of the [FeFe]-Hydrogenase from *Desulfovibrio desulfuricans* by O₂ or Light under Hydrogen Producing Conditions; *ChemPlusChem*, **2017**, *82*, 540 – 545
- 5) **P. Rodríguez-Maciá**, E. J. Reijerse, W. Lubitz, J. A. Birrell and O. Rüdiger. Spectroscopic Evidence for Reversible Disassembly of the [FeFe] Hydrogenase Active Site; *J. Phys. Chem. Lett.*, **2017**, *8*, 3834 – 3839
- 6) **P. Rodríguez-Maciá**, K. Pawlak, O. Rüdiger, E. J. Reijerse, W. Lubitz and J. A. Birrell, Inter-cluster Redox Coupling Influences Protonation at the H-cluster in [FeFe] Hydrogenases; *J. Am. Chem. Soc.*, **2017**, *139*, 15122 – 15134
- 7) V. Engelbrecht, **P. Rodríguez-Maciá**, J. Esselborn, A. Sawyer, A. Hemschemeier, O. Rüdiger, W. Lubitz, M. Winkler, T. Happe. The Structurally Unique Photosynthetic *Chlorella variabilis* NC64A Hydrogenase Does Not Interact with Plant-type Ferredoxins; *Biochim. Biophys. Acta Bioenerg.*, **2017**, *1858*, 771 – 778
- 8) L. Kertess, A. Adamska-Venkatesh, **P. Rodríguez-Maciá**, O. Rüdiger, W. Lubitz and T. Happe. Influence of the [4Fe-4S] Cluster Coordinating Cysteines on Active Site Maturation and Catalytic Properties of *C. reinhardtii* [FeFe]-hydrogenase; *Chem. Sci.*, **2017**, *8*, 8127 – 8137
- 9) A. A. Oughli, A. Ruff, N. Priyadarshani-Boralugodage, **P. Rodríguez-Maciá**, N. Plumeré, W. Lubitz, W. J. Shaw, W. Schuhmann, O. Rüdiger. Dual Properties of a Bio-inspired Ni-catalyst Promoted by a Polymer Matrix as a Case of Self-defense; *Nat. Commun.*, **2018**, *9*, 864
- 10) **P. Rodríguez-Maciá**, E. J. Reijerse, S. DeBeer, W. Lubitz, O. Rüdiger, J. A. Birrell. Sulfide Protects [FeFe] Hydrogenases From O₂; *J. Am. Chem. Soc.*, **2018**, *140*, 9346–9350
- 11) **P. Rodríguez-Maciá**, L. Kertess, J. Burnik, J. A. Birrell, E. Hofmann, W. Lubitz, T. Happe, Rüdiger O. His-Ligation to the [4Fe-4S] Subcluster Tunes the Catalytic Bias of [FeFe] Hydrogenase, *J. Am. Chem. Soc.*, **2019**, *141*, 472-481
- 12) N. Chongdar, K. Pawlak, O. Rüdiger, E. J. Reijerse, **P. Rodríguez-Maciá**, W. Lubitz, J. A. Birrell, H. Ogata, *J. Biol. Inorg. Chem.*, **2019**, *in press*
- 13) **P. Rodríguez-Maciá**, L. M. Galle, R. Bjornsson, C. Lorent, I. Zebger, Y. Yoda, S. P. Cramer, S. DeBeer, Ingrid Span, J. A. Birrell, *submitted*, **2020**